Printing Industry generates a wide range of products which require in every step of our everyday life. Starting from newspapers, magazines, books, post cards to memo pads and business order forms each are the products of printing industry. Printing is a process for reproducing text and image, typically with ink on paper using a printing press. There are various types of printing process for example offset printing, modern printing, gravure printing, flexographic printing etc. Offset printing is a widely used printing technique where the inked image is transferred from a plate to a rubber blanket, then to the printing surface. When used in combination with the lithographic process, the offset technique employs a flat image carrier on which the image to be printed obtains ink from ink rollers, while the non printing area attracts a film of water, keeping the non printing areas ink free. Gravure printing is a printing technique, where the image to be printed is made up of small depressions in the surface of the printing plate. It is divided into three broad product areas; packaging printing, publication printing and speciality printing. Printing technology is often carried out as a large scale industrial process, and is an essential part of publishing and transaction printing. This is the age of hi fi, jets and computers. Rapid advancements in science and technology have made their impact on the printing industry of the world too. The old techniques of printing have become obsolete and made way for the new technology. The printing industry is just one example of an entire industry movement that is changing while keeping up with the development of new technologies. The proliferation of emerging technologies has dictated a rebirth of the printing industry. The Indian Printing Industry is well established and presently growing at 12% per annum.

This book majorly deals with typographic technology, photo scanning systems, sequence of steps in the printing processes, size and scope of the printing industry, high volume printing technologies for the production of polymer electronic structures, inking system, film high contrast printing, principle of planographic printing, modern printing process, ink jet etc.

The book contains the latest printing processes like web, gravure, flexo, security and offset printing. This book is an invaluable resource for new entrants, technicians, craftsmen and executives working with printing industries.

Contents

1. The Beginning of Printing
   Typographic Technology
   Hand composition
   Linotype
   Monotype
   Ludlow
   Photo-scanning systems
Systems components
Digital typesetting
Scanning and laser systems
Basic classification of typefaces
Planning a Page
Type Measurement
2. The Printing Industry
Introduction
Development of Ideographs
Development of Phonetic Symbols
Printing Technology
Sequence of Steps in the Printing Processes
Size and Scope of the Printing Industry
Commercial Printing
Special Purpose Printing
In-Plant Printing
Preparing for a Career in Printing
Career Advancement
3. Printing Press
Press Development
Understanding Offset Press Operation
Feeding Unit
The Registration Unit
Multicolor Sheet-Fed Presses
The Press Console
Components of a Web Press
Towards Total Automation
4. High Volume Printing Technologies for the production of Polymer Electronic Structures
Why Printing in Polymer Electronics?
Fundamental Concepts for the Production of Polymer Electronics
Printing Technologies
State of the Art in Printing Electronics
Challenges of Printing Polytronics
Conclusion
5. Sheet-Fed Offset Machines
Names of the machines
Mechanical features
Functions of the blower foot
Sheet insertion and transfer
Gripper designs
Inking system
Distribution system
Wash-up device
Adjustment of rollers
Maintenance of rollers
Different dampening systems
Conventional dampening system
Cleaning of dampeners
Brush feed dampening system
Plate cylinder
Blanket cylinder
Impression cylinder
Adjustment of cylinders
Delivery mechanism
Qualities of a good delivery system
Attachments on the delivery part (board)
Miscellaneous operations
6. Printing Processing
   Printing Exposing
7. Film High contrast Printing
   Tonal Deletion
   Tone Line
   Making the Separations
   Printing Separations
   Bas Relief
   Colour Manipulations
   Sandwiching
   Standard Negatives
   Data Sheets
   Evaluating Contact Sheets
   Evaluating for Colour Filtration
   Fine Colour Printing
   Controlling Colour Materials
   The New High-Speed Film
   Colour Transparency Films
   Printing, Colour Positives
   Test Prints
   Processing Ektachrome 14 Paper
   Processing Cibachrome A-11
8. Origin of Planigraphy
   Principle of Planographic Printing
   Direct printing process
   Materials, Tools and Equipments
   Dampening cloth
   Vaseline
9. Offset Press
   Dampening Solutions
   Feeding & Registering system
   The delivery system
   Mabeg feeder
   Sheet Detection
   Press Make ready, and Operation
   Feedboard setting
   Setting the sheet path
   Fitting the plate
   Ink preparation
   Multicolour printing
   The multicolour press
   The Perfector Press
   Infra-Red Drying on Web-Offset
   Offset printing Machines
   Business Form Production
10. Paper Technology
   The History of Paper
   From plant to paper:
Europe's first paper mill
America's first paper mill
Paper Specification
Paper faults During Printing
Make Ready Procedure
Types of Paper
Paper Requirements For Offset Printing
Testing the properties which effect print quality
Types of Papers
Beating and Hydration
Requirements for Printability of Paper
Printing & Paper Troubles & How to Overcome
The Indian Paper Industry
International Paper Sizes
Paper Calculation
Estimate Paper Need
11. Modern Printing Process
Ink Zet
Film Plotting Machine
Computer to Plate Technology (CTP)
Computer To Plate
Scanners
Digital Colour Presses & Computer to Press
Making digital plate production cheaper
The Digital Offset Colour Revolution: E-Print 1000
Market forces
Quality & Productivity
Anilox Offset
More Economical For Frequent Partial
Editions with high Colour Content
Waterless Anilox Offset
Produce a complete newspaper by computer software
12. Pad Printing Application
13. Gravure Printing
The Gravure Industry
Basic Gravure Concepts
Cylinder Construction and Preparation
Copper Plating and Polishing
Gravure Presswork
Cylinder and Doctor Blade Considerations
Impression Rollers
Trends in Gravure
14. Web Offset Machines
Design of web machines
Reel stand unit
Main parts of printing unit
Sequence of colours in printing
Quality Control in Printing
Dampening solution
15. The Flexographic Printing
16. Security Printing

Credit cards
About NIIR

NIIR PROJECT CONSULTANCY SERVICES (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.


NPCS also publishes varies process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.